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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/021,437 | 12/19/2001 | Yasuhiko Matsuoka | KOJIM 200-D-1 | 3284 |
| 23599 | 7590 | 04/12/2004 | EXAMINER | |
| MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201 | | | LUK, EMMANUEL S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1722 | |

DATE MAILED: 04/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,437

Applicant(s)

MATSUOKA ET AL.

Examiner

Emmanuel S. Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 and 8-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6, 8-12 and 16-19 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 6 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boneberger et al (5894002) in view of Gibson (5093067).

Boneberger teaches the claimed apparatus having a mold (1,2) having a cavity (12) corresponding to the outer contour of an article to be duplicated, the mold being transparent (Col. 6, lines 19-24), means for casting or filling (6) the mold cavity, means for irradiating light (7) from outside the mold.

Boneberger fails to teach a mother mold and the mother mold is made from a photo-curable liquid silicone rubber composition.

The mold halves taught by Boneberger forms the cavity. The mother mold has the same function as a mold if it is not already the same thing with an alternate name.

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Gibson teaches materials can be made from liquid silicone rubber, commercially available by Dow Corning that is injected into a mold and cured to form a product. The product can be used including as a mold for forming other products.

It would have been obvious to one of ordinary skill in the art to modify Boneberger with mother molds that have the same function in forming a cavity for shaping the outer contour of the desired product and the mold made from liquid silicone rubber as taught by Gibson because it allows for the mold to be shaped to the desired shape and thus creating the desired product shape.

In regards to claim 9, the wavelength range of 200 to 500 nm is in the visible light spectrum and thus the light source taught by Boneberger would cover the wavelength range claimed.

In regards to claims 10 and 11, these are features are properties of the silicone rubber composition and thus do not further limit the parent claim if the properties are already inherent features of the material.

In regards to claim 12, the material to be filled in the mold cavity is an intended use of the apparatus and has little patentable weight since there is no further structural limitation to the parent claim.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boneberger (5894002) as applied to claims 6 and 9-12 above, and further in view of Hayashi et al (4995799).

Boneberger fails to teach agitating and defoaming under reduced pressure.

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Hayashi teaches an optical manufacturing apparatus having a gas pressure control mean and defoaming means to defoam the photopolymer (Col. 15, lines 50-57). Thus, the polymer is defoamed under reduced pressure, thereby it would have been obvious to one of ordinary skill in the art to modify Boneberger with gas pressure control mean and defoaming means as taught by Hayashi because it allows for defoaming of the polymer prior to curing.

5. Claims 17 -19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boneberger in view of Gibson as applied to claims 6 and 9-12 above, and further in view of Tensor (5885514).

Boneberger in view of Gibson fails to teach the mother mold separable to two or more sections and the means for irradiating is one or more UV fluorescent lamps.

Tensor teaches a transparent mold comprising of two sections (30,40) that is used for forming and the use of infrared lamps (42), the mold having runners (52) for filling the cavity via injection molding (Col. 49-55).

It would have been obvious to one of ordinary skill in the art to modify Boneberger in view of Gibson with mold sections, runner and UV lamps as taught by Tensor because it allow for an improved process for molding parts.

Allowable Subject Matter

6. Claims 13, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach mother mold comprised of photo-curable liquid silicone rubber composition comprising 100 parts by weight of an organopolysiloxane and a photo-initiator, the organopolysiloxane comprising 30 to 100% by weight of an organopolysiloxane of the claimed compositional formula.

The closest prior art, Boneberger in view of Gibson, discusses the use of liquid silicone rubber for the formation of articles. However, the prior art do not specify the exact composition of the liquid silicone rubber for use as the transparent material for the mother mold. Several organopolysiloxane compositions taught by Liles, Nagaoka, Narula and Amako, do not teach the use of this exact composition as the building material in the mother mold as claimed in the claimed apparatus.

Response to Arguments

8. Applicant's arguments filed 1/16/04 have been fully considered but they are not persuasive. The rejection of claim 6 has changed with Boneberger in view of Gibson due to the amendment by the applicant, and also in view of Hayashi for claim 8. Here, Boneberger does teach parts of the mold as being transparent. The use of silicone

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rubber as a building material for forming a structure is well known in the molding arts and thus it is obvious to one skilled in the art to recognize that the mold can be build from this material and also recognize that if the mold is made from this material, it can be entirely transparent rather than partially. Regardless, the structure of the apparatus is made from a transparent material, it maybe made from a photo-cured resin, but the resin may also be made from heat cured. The method of making the mold is not considered in an apparatus claim especially since a different method can be utilized to form the same structure.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Amako, Narula, Liles and Nagoka.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (571) 272-1134. The examiner can normally be reached on Monday-Thursday 7 to 4 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EL


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700